



Missouri  
Department of  
Natural Resources

Use Attainability Analysis  
for  
WBID 3300 Tributary to South Flat Creek  
Submitted by  
SES, Inc.  
To  
Missouri Department of Natural Resources  
Water Protection Program  
On  
May 28, 2008

## Field Data Sheets for Recreational Use Stream Surveys

### **Data Sheet A – Water Body Identification**

#### **I. Water Body Information** (for water body being surveyed)

Water Body Name (from USGS 7.5' quad): Tributary to South Flat Creek
Missouri Water Body Identification (WBID) Number: 3300
8-digit HUC: 10300103
County(ies), Listed Upstream to Downstream: Benton
Upstream Legal Description (from Table H): 43N 22W section24
Downstream Legal Description (from Table H): 43N 22W section22
Number of sites evaluated: 3
List all site numbers, <u>consecutively upstream to downstream</u> : 1, 2, 3
<b>Include a Site Location Map(s).</b> The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).

#### **II. Facility Information** (list all permitted discharges to this water body segment)

Facility Name(s) and Permit Number(s): City of Ionia MO0130028
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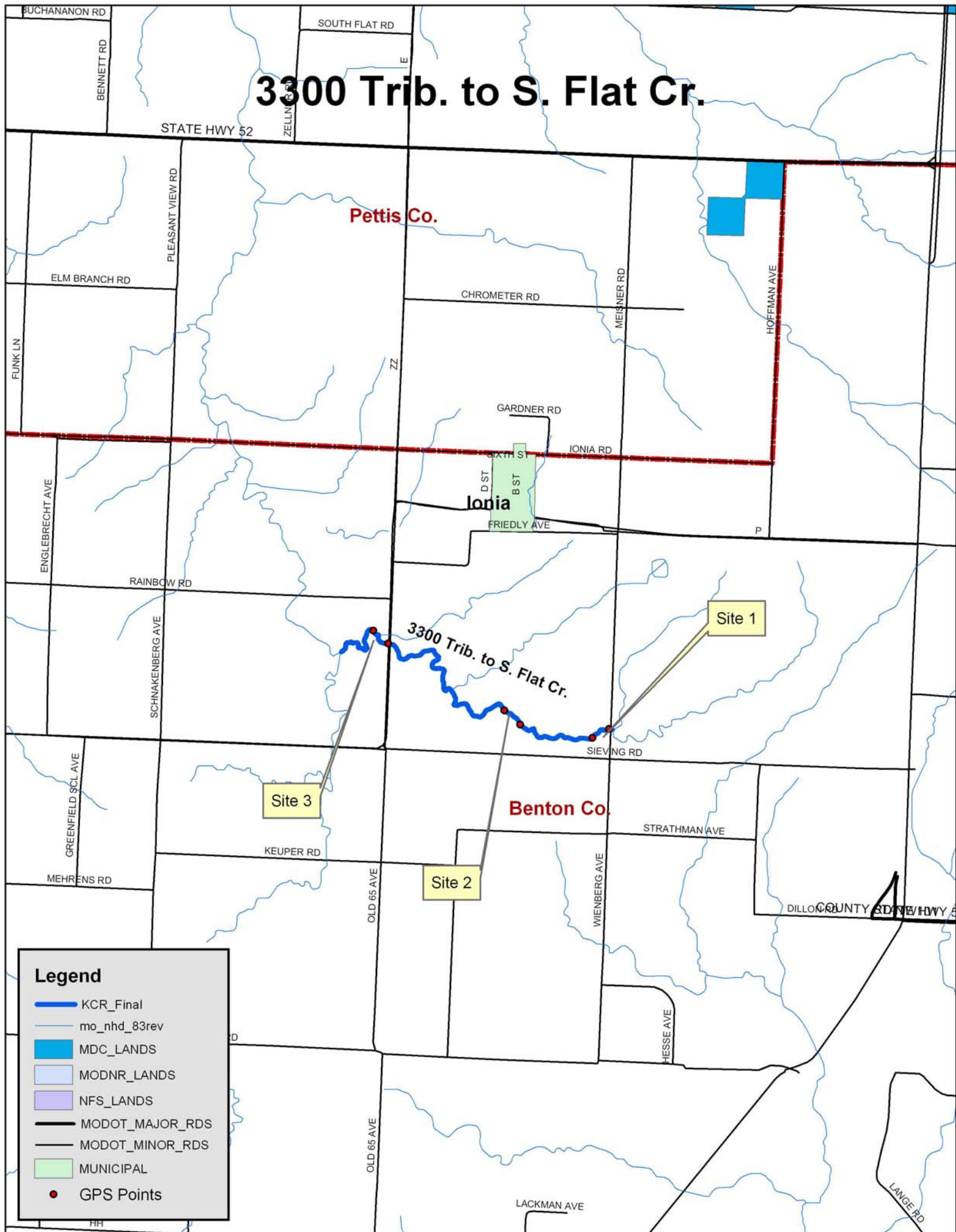
#### **III. UAA Surveyor** (please **PRINT** legibly)

Name of Surveyor: Aaron Ball	Telephone Number: 913.307.0046 Ext.14
Organization/Employer: SES, Inc.	

**Please verify that you have completed all sections of all data sheets, checked all applicable boxes, provided a map (that includes all requirements listed in the *Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol*) and that this form is complete.**

**Signed:** Aaron Ball **Date:** 5.09.08

# 3300 Trib. to S. Flat Cr.



**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 5.01.08 12:00	Location Description (e.g., road crossing):  Wienberg Road
<b>Stream Name:</b> Trib. to S. Flat Cr.	
Current Weather Conditions: cloudy	Facility Name(s): City of Ionia
Weather Conditions for Past 10 days: 4.01 inches	Permit Number(s): MO0130028
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0472814	Northing (UTM Y): 4259187	Horizontal Accuracy: (EPE / FOM / PDOP)	3 Meters
Site 11	Easting (UTM X): 0472637	Northing (UTM Y): 4259092	Horizontal Accuracy: (EPE / FOM / PDOP)	5 Meters

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
86	downstream, T1	87	cow tracks	88	upstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Site #1

**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Livestock Watering
<input type="checkbox"/> None of the above	Comments / Other:			

**Substrate\*:** (These values should add up to 100%.)

% Cobble	30% Gravel	40% Sand	% Silt	30% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

none in water; banks are vegetated
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**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site #1

**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Printed Names of Personnel Collecting Data: Gilisa Gould and Aaron BallSurveyor's Signature: Aaron Ball Date of Survey: 5.01.08Organization: SES, Inc. Position: Field Team Leader

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Stream Name: <u>Trib. To S. Flat Cr.</u> Waterbody ID: <u>3300</u> Site #: <u>1</u>																<b>Dissolved Oxygen</b>						
Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water)																Date: <u>5.01.08</u> Time: <u>12:00</u>						
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)																Dissolved Oxygen: <u>9.5</u> (mg/L)						
<b>01</b> UTM X: <u>0472814</u> UTM Y: <u>4259187</u> +/- <u>3</u> (meters)																Dissolved Oxygen: _____ (% sat)						
<b>11</b> UTM X: <u>0472637</u> UTM Y: <u>4259092</u> +/- <u>5</u> (meters)																Specific Cond: _____ (µS/cm)						
Average Stream Width: <u>2</u> (meters)      Length of Survey Segment: <u>150</u> (meters)																Water Temperature: <u>17.6</u> (°C)						
(To determine Length of Reach)      (20x average stream width)																						
Field Staff: <u>Gilisa Gould and Aaron Ball</u>																						
<b>Transect Cross-Section</b>																						
<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.10	0.05	0.10	0.01	0.10	0.05	0.20	0.15	0.10	0.10	0.05	0.20	0.10	0.10	0.25	0.10	0.15	0.20	0.20	0.10	0.10	
2	0.20	0.05	0.20	0.01	0.20	0.05	0.40	0.20	0.20	0.05	0.20	0.10	0.40	0.15	0.20	0.35	0.20	0.10	0.40	0.25	0.20	0.10
3	0.30	0.05	0.30	0.05	0.30	0.01	0.60	0.15	0.30	0.01	0.30	0.10	0.60	0.20	0.30	0.20	0.30	0.10	0.60	0.35	0.30	0.10
4	0.40	0.05	0.40	0.05	0.40	0.10	0.80	0.10	0.40	0.05	0.40	0.10	0.80	0.30	0.40	0.25	0.40	0.10	0.80	0.40	0.40	0.10
5	0.50	0.05	0.50	0.05	0.50	0.10	1.00	0.10	0.50	0.05	0.50	0.10	1.00	0.30	0.50	0.25	0.50	0.10	1.00	0.40	0.50	0.05
6	0.60	0.05	0.60	0.10	0.60	0.10	1.20	0.05	0.60	0.10	0.60	0.10	1.20	0.20	0.60	0.25	0.60	0.10	1.20	0.40	0.60	0.01
7	0.70	0.05	0.70	0.10	0.70	0.10	1.40	0.05	0.70	0.10	0.70	0.10	1.40	0.15	0.70	0.30	0.70	0.10	1.40	0.40	0.70	0.01
8	0.80	0.05	0.80	0.10	0.80	0.10	1.60	0.05	0.80	0.10	0.80	0.10	1.60	0.15	0.80	0.30	0.80	0.10	1.60	0.35	0.80	0.01
9	0.90	0.05	0.90	0.10	0.90	0.10	1.80	0.05	0.90	0.10	0.90	0.05	1.80	0.10	0.90	0.20	0.90	0.10	1.80	0.20	0.90	0.05
Right Bank	1.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	1.00	0.00
Feature Type	run		run		run		pool		run		pool		pool		run		run		pool		run	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Aaron Ball      Date: 5.09.08

**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 5.01.08 12:30	Location Description (e.g., road crossing): off of Sieving Road
<b>Stream Name:</b> Trib. To South Flat Creek	
Current Weather Conditions: cloudy	Facility Name(s): City of Ionia
Weather Conditions for Past 10 days: 4.01 inches	Permit Number(s): MO0130028
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0471864	Northing (UTM Y): 4259237	Horizontal Accuracy: (EPE / FOM / PDOP)	4 Meters
Site 11	Easting (UTM X): 0471690	Northing (UTM Y): 4259388	Horizontal Accuracy: (EPE / FOM / PDOP)	4 Meters

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
89	downstream, T1	90	cow tracks	91	upstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				



Site #2

**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other:
Comments: pasture, wheat field				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Livestock Watering
<input type="checkbox"/> None of the above	Comments / Other:			

**Substrate\*:** (These values should add up to 100%.)

% Cobble	10% Gravel	30% Sand	% Silt	60% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

none in water; banks are vegetated

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input checked="" type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site #2

**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Printed Names of Personnel Collecting Data: Gilisa Gould and Aaron BallSurveyor's Signature: Aaron Ball Date of Survey: 5.01.08Organization: SES, Inc. Position: Field Team Leader

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Stream Name: <u>Trib. To S. Flat Cr.</u> Waterbody ID: <u>3300</u> Site #: <u>2</u>																<b>Dissolved Oxygen</b>						
Estimated Channel Incision: <u>3</u> (m) (height between low bank width and water)																Date: <u>5.01.08</u> Time: <u>12:30</u>						
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)																Dissolved Oxygen: <u>6.4</u> (mg/L)						
<b>01</b> UTM X: <u>0471864</u> UTM Y: <u>4259237</u> +/- <u>4</u> (meters)																Dissolved Oxygen: _____ (% sat)						
<b>11</b> UTM X: <u>0471690</u> UTM Y: <u>4259388</u> +/- <u>4</u> (meters)																Specific Cond: _____ (µS/cm)						
Average Stream Width: <u>3</u> (meters)      Length of Survey Segment: <u>150</u> (meters)																Water Temperature: <u>16.9</u> (°C)						
(To determine Length of Reach)      (20x average stream width)																						
Field Staff: <u>Gilisa Gould and Aaron Ball</u>																						
<b>Transect Cross-Section</b>																						
<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.30	0.60	0.30	0.15	0.20	0.10	0.20	0.20	0.40	0.35	0.30	0.60	0.40	0.20	0.30	0.15	0.30	0.20	0.20	0.10	0.30	0.10
2	0.60	0.90	0.60	0.30	0.40	0.10	0.40	0.30	0.80	0.45	0.60	0.60	0.80	0.30	0.60	0.15	0.60	0.20	0.40	0.25	0.60	0.10
3	0.90	0.95	0.90	0.45	0.60	0.10	0.60	0.40	1.20	0.60	0.90	0.70	1.20	0.30	0.90	0.05	0.90	0.20	0.60	0.40	0.90	0.15
4	1.20	0.95	1.20	0.60	0.80	0.10	0.80	0.40	1.60	0.70	1.20	0.70	1.60	0.45	1.20	0.00	1.20	0.20	0.80	0.40	1.20	0.20
5	1.50	0.95	1.50	0.60	1.00	0.10	1.00	0.45	2.00	0.70	1.50	0.70	2.00	0.55	1.50	0.10	1.50	0.30	1.00	0.50	1.50	0.40
6	1.80	0.90	1.80	0.50	1.20	0.10	1.20	0.50	2.40	0.70	1.80	0.60	2.40	0.55	1.80	0.00	1.80	0.40	1.20	0.50	1.80	0.40
7	2.10	0.90	2.10	0.30	1.40	0.10	1.40	0.40	2.80	0.50	2.10	0.35	2.80	0.50	2.10	0.05	2.10	0.30	1.40	0.45	2.10	0.30
8	2.40	0.80	2.40	0.20	1.60	0.10	1.60	0.25	3.20	0.30	2.40	0.30	3.20	0.40	2.40	0.05	2.40	0.20	1.60	0.30	2.40	0.30
9	2.70	0.70	2.70	0.15	1.80	0.10	1.80	0.20	3.60	0.20	2.70	0.20	3.60	0.30	2.70	0.05	2.70	0.10	1.80	0.20	2.70	0.20
Right Bank	3.00	0.00	3.00	0.00	2.00	0.00	2.00	0.00	4.00	0.00	3.00	0.00	4.00	0.00	3.00	0.00	3.00	0.00	2.00	0.00	3.00	0.00
Feature Type	pool		pool		run		pool		pool		pool		run		riffle		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Aaron Ball      Date: 5.09.08

**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 5.01.08 13:25	Location Description (e.g., road crossing): Old 65 Road
<b>Stream Name:</b> Tributary to South Flat Creek	
Current Weather Conditions: cloudy	Facility Name(s): City of Ionia
Weather Conditions for Past 10 days: 4.01 inches	Permit Number(s): MO0130028
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0470451	Northing (UTM Y): 4260103	Horizontal Accuracy: (EPE / FOM / PDOP)	7 Meters	
Site 11	Easting (UTM X): 0470296	Northing (UTM Y): 4260244	Horizontal Accuracy: (EPE / FOM / PDOP)	7 Meters	

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
92	downstream, T1	93	upstream, T11		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Site #3

**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

**Substrate\*:** (These values should add up to 100%.)

% Cobble	10% Gravel	60% Sand	% Silt	20% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

none in water
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**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input checked="" type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: reddish-brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site #3

**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Printed Names of Personnel Collecting Data: Gilisa Gould and Aaron BallSurveyor's Signature: Aaron Ball Date of Survey: 5.01.08Organization: SES, Inc. Position: Field Team Leader

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Stream Name: <u>Trib to S. Flat. Cr.</u> Waterbody ID: <u>3300</u> Site #: <u>3</u>																<b>Dissolved Oxygen</b>						
Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water)																Date: <u>5.01.08</u> Time: <u>13:25</u>						
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)																Dissolved Oxygen: <u>9.2</u> (mg/L)						
<b>01</b> UTM X: <u>0470451</u> UTM Y: <u>4260103</u> +/- <u>7</u> (meters)																Dissolved Oxygen: _____ (% sat)						
<b>11</b> UTM X: <u>0470296</u> UTM Y: <u>4260244</u> +/- <u>7</u> (meters)																Specific Cond: _____ (µS/cm)						
Average Stream Width: <u>3</u> (meters)      Length of Survey Segment: <u>150</u> (meters)																Water Temperature: <u>19.1</u> (°C)						
(To determine Length of Reach)      (20x average stream width)																						
Field Staff: <u>Gilisa Gould and Aaron Ball</u>																						
<b>Transect Cross-Section</b>																						
<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.30	0.10	0.30	0.30	0.40	0.10	0.01	0.40	0.10	0.30	0.10	0.20	0.10	0.30	0.05	0.50	0.20	0.50	0.20	0.40	0.35	
2	0.60	0.10	0.60	0.35	0.80	0.15	0.20	0.05	0.80	0.20	0.60	0.20	0.40	0.10	0.60	0.05	1.00	0.25	1.00	0.35	0.80	0.35
3	0.90	0.20	0.90	0.40	1.20	0.20	0.30	0.05	1.20	0.20	0.90	0.20	0.60	0.05	0.90	0.05	1.50	0.30	1.50	0.40	1.20	0.40
4	1.20	0.25	1.20	0.55	1.60	0.20	0.40	0.05	1.60	0.20	1.20	0.25	0.80	0.20	1.20	0.01	2.00	0.30	2.00	0.40	1.60	0.50
5	1.50	0.30	1.50	0.50	2.00	0.20	0.50	0.05	2.00	0.20	1.50	0.20	1.00	0.20	1.50	0.10	2.50	0.30	2.50	0.40	2.00	0.50
6	1.80	0.30	1.80	0.40	2.40	0.20	0.60	0.10	2.40	0.20	1.80	0.15	1.20	0.20	1.80	0.20	3.00	0.20	3.00	0.40	2.40	0.35
7	2.10	0.30	2.10	0.30	2.80	0.20	0.70	0.10	2.80	0.15	2.10	0.10	1.40	0.25	2.10	0.20	3.50	0.20	3.50	0.35	2.80	0.25
8	2.40	0.25	2.40	0.25	3.20	0.10	0.80	0.10	3.20	0.01	2.40	0.01	1.60	0.25	2.40	0.25	4.00	0.15	4.00	0.30	3.20	0.20
9	2.70	0.20	2.70	0.15	3.60	0.10	0.90	0.01	3.60	0.05	2.70	0.05	1.80	0.20	2.70	0.15	4.50	0.10	4.50	0.20	3.60	0.15
Right Bank	3.00	0.00	3.00	0.00	4.00	0.00	1.00	0.00	4.00	0.00	3.00	0.00	2.00	0.00	3.00	0.00	5.00	0.00	5.00	0.00	4.00	0.00
Feature Type	pool		pool		pool		riffle		run		run		run		run		pool		pool		pool	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Aaron Ball      Date: 5.09.08

**WBID# 3300 Tributary to South Flat Creek**



**Site# 1 Photo ID# 86, Downstream, T1**



**Site# 1 Photo ID# 88, Upstream, T11**



**Site# 1 Photo ID# 87, Cow Tracks**



**Site# 2 Photo ID# 91, Upstream, T11**



**WBID# 3300 Tributary to South Flat Creek**



**Site# 2 Photo ID# 89, Downstream, T1**



**Site# 3 Photo ID# 92, Downstream, T1**



**Site# 2 Photo ID# 90, Cow Tracks**



**Site# 3 Photo ID# 93, Upstream, T11**